

Taylor (R. W.)

A CONTRIBUTION

TO THE

STUDY

—OF—

Syphilis *of the* Nervous System

By R. W. TAYLOR, M.D.

*Physician to the Charity Hospital, and to the Out-Door Department for
Skin Diseases, of Bellevue Hospital, New York.*

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CERTAINLY in no department of clinical medicine has more real progress been made within the past ten years than in the study of affections of the nervous system due to syphilis. Indeed, so carefully have the various affections been described and so fully have they been illustrated by cases, that I felt much hesitation in accepting the courteous invitation of the President of this society to read before it a paper on this subject. However, in looking over my records of cases, I saw that among the many instances of syphilis of the nervous system which it has been my good fortune to observe there were a few cases which would prove a not uninteresting subject for study, and which I thought would be still more interesting if discussed by the members at one of the meetings of this society. I shall first call attention to a group of cases in which the symptoms point to a meningitis of subacute nature, undoubtedly caused by syphilis. I am induced to do so, as we have not as yet a clear didactic description of the condition in question, which I am convinced has peculiar features, being in fact a definite affection, and therefore worthy of careful study. In contrast with that condition, I shall call attention to certain mild and ephemeral nervous phenomena as presented by a case observed by me, in which slight disturbances of the intellect and of the special senses were caused by syphilis. I think that this case may be considered as a prototype, presenting a not uncommon class of symptoms produced by syphilis,

more especially in women. Finally, I shall give the complete history of a remarkable case of chronic arterial trouble with hemiplegia, occurring in the fifth month of syphilitic infection, as it presents many important considerations.

The following is the history of the three cases of subacute meningitis, given without unnecessary detail as to symptoms and lesions not pertinent to the present study. I may here say, however, that the history of syphilis is undoubted, as the diagnosis was accurately made by me in each instance.

F. M., Irish, clerk, aged 24, married, came under my observation, being sent to me by Dr. Willard Parker, in October, 1869, having a typical Hunterian chancre. Upon his body was a well-marked roseola, his throat was hyperæmic, and all the external ganglia of the body were much swollen, more particularly the left inguinal, and he had suffered with cephalalgia and flying rheumatic pains. The diagnosis of syphilis was made and he was warned of the dangers of contaminating his wife, which was unfortunately too late, as she was seen by me the next day with a typical chancrous erosion. The husband was treated with mercury, and in less than three months his health seemed perfect, hence he became rather reckless of himself and did not regularly follow treatment. His habits became dissipated again, and he was not seen by me for several months. In the latter part of August, 1870, he sought relief for a severe pain in his head and in his bones generally. His pain was principally local, being limited to the frontal region, and though continuous as a rule, was sometimes worse at night. He complained of slight impairment of his sight, saying that he saw better at a distance than near by, and I found that he had well-marked mydriasis of the right side. He was then actively treated by inunction of mercurial ointment, and internally took iodide of potassium in good doses, with syrup of the iodide of iron. His general hygiene was rendered better under my directions. He was greatly improved by this treatment, and declared himself well by the first of September, when he again became careless. He passed from observation until the middle of October, when he again complained, but of more pronounced symptoms. He was very weak, being scarcely able to walk up stairs; of this he complained bitterly.

His sleep at night was very much disturbed, and he had unpleasant dreams and a persistent headache; during the day he was often troubled with vertigo without fully losing consciousness, and his memory was very much weakened. He complained of great nervousness. His pulse was 80 and quite full, his skin moist, and his appetite and digestion very fair in character. He remained in this condition for about two weeks, in spite of appropriate treatment. During this period he had no other symptoms, but there was a continuous increase of temperature. I was unable to make regular morning and evening observations, still I watched this feature carefully, and I found that he had regularly a morning temperature of $100\frac{1}{5}^{\circ}$ Fah., and in the evening $101\frac{2}{5}^{\circ}$ to 102° . He occasionally complained of pains in the bones, and said that a deep-seated pain in the lumbar region was present the greater part of the time. The weakness at this time became so pronounced that he took to his bed, when he presented many of the features of an adynamic fever—for instance, typhoid. At this time I had opportunities for full observation, and I made regular thermometric observations, as well as took records of the pulse, respiration, etc., but my space forbids my giving more than a full outline. His head symptoms became very severe; he had a continuous delirium for four days, with some intervals of full consciousness. When he was conscious he complained of his head, and for a few days his right pupil was largely dilated. His appetite was very poor, and he took only small quantities of nutritious liquids. For the period of his illness in bed, his temperature ranged between 102° morning and 103° and 104° in the evening. His pulse was never beyond 105, being usually about 98 in the evening and about six beats less in the morning. His heat of skin was not marked and pungent, nor did he complain of much thirst. His tongue at the worst became rather dry, never, however, being covered with a dirty film, as in fever. It was of a deep red, glazed in the centre, and raw at the edges. He had no tympanitis or diarrhoea, nor at any time had he had epistaxis. His chief symptoms, then, were extreme weakness and exhaustion, constant headache, a mild and remitting delirium, which was not particularly worse at night, and a continuous mild hyperpyrexia. As I knew the

man's history so well, I was fully suspicious of syphilis, still in the early stages of the affection I regarded the case as of incipient typhoid. The treatment at first was, as indicated, for that disease, of a tonic, supporting character. Quinine was given in large doses for five days, but the delirium was not at all checked, nor were there any evidences of improvement. On the sixth day I had convinced myself that the patient had primarily some syphilitic lesion of the brain, and instituted treatment to that end. He took regularly 2 grains of quinine every four hours, with infusion of serpentaria, and to this I added 10 grains of iodide of potassium every four hours, combined at night with 30 grains of bromide of potassium, which on some occasions were repeated. In three days I increased the iodide to 15 grains, as it was well borne, and continued the bromide, and again in three days, as the delirium was improved, I raised the dose to 24 grains. At this time I began to notice a slight but decided improvement. Still there was occasionally an exacerbation of delirium, in which he had mild hallucinations, and the headache, which was principally frontal, continued. For this reason, and failing to observe the well-marked features of a malignant fever, and owing to the tolerance, I pushed the iodide to thirty grains every four hours, so that every day the patient took two drachms of that salt. Towards the end of the second week of the illness, the cerebral symptoms were much improved, there being less cephalalgia, scarcely any delirium, and the temperature ranged between 100 in the morning and a fraction above that in the evening. The patient's strength slowly returned, and he sat up for a few hours without fatigue. His general condition was also improved. His mind was not as vigorous as of old, and his memory was slightly impaired. Certain symptoms at this time were noted by me which I attributed to a simple state of anæmia of the brain, rather than as a part of his specific illness. He became petulant and irascible, and on slight cause passed from a condition of unwonted hilarity to deep depression. In the third week of his illness, he began to walk in the open air, and his condition was similar to that of a convalescent from an adynamic fever. I rigidly enforced the continuous use of the iodide, and restricted the man, as far as possible,

from bad habits. He gradually became quite well, having reached a dose of the iodide of one drachm four times daily. He was seen by me several months later; he had no cerebral symptom, his headache was cured, his memory as good as ever, his sleep was undisturbed, and his temper the same as before he became syphilitic.

CASE II.—M. N., Irish, aged 32, a seaman, came to me March 31st, 1873, having an indurated chancre, and a sparse papular syphilide was observed over the whole body. The face of the man was pale and sallow, and he complained of great weakness and of nocturnal pain in the shoulders. He was ordered to take the proto-iodide of mercury and tonics. In April I found that his digestion was disordered by the mercurial, so I substituted the bichloride of mercury in subcutaneous injections. At this time he had that slight jaundice observed in the secondary stage of syphilis, which had been present in a slight form on his previous visit. He had suffered so severely at night with pains in the descending cervical nerves that he could not sleep. Under the hypodermic injections and a tonic treatment, the health of the man was much improved by the first of May, and his jaundice had disappeared. He had, however, suffered in the interval—sometimes very much—with the pains in the region named, as well as in the course of the temporal nerves. The man was not of strong build; his family history showed deaths by phthisis, and there were evidences of a previous pulmonary trouble in the left apex, where rough, prolonged expiration was heard. The side was considerably flattened, and expansion was very slight there. In May he made a trip to Charleston, and was ordered to take a mercurial with tonics while absent. In June he came to me again and complained of pains in the tibiae, right hip, and along the crest of the ilium of the same side. He said also that he had a continuous headache, sometimes aggravated at night by pain in the cervical and temporal nerves. His memory was weak, his senses less acute, and in reply to questions he required time to deliberate as to his answer. He was apathetic as to matters which formerly interested him; he complained of sleeplessness and of confusion of thought, and inability to logically argue a question in his mind. His hearing was less acute than formerly,

and a continuous roaring noise was complained of. When walking he sometimes became dizzy and unsteady. Occasionally despondent feelings came over him, and slight impressions caused him sometimes to tremble violently. By the advice of friends, he entered a hospital, either St. Luke's or the Roosevelt, in July, and was there much benefited. He stated that he took the iodide of potassium. I lost sight of him then for some time, and for fully a month he did not take any medicine. The result was that his symptoms again appeared, and he applied to me once more for relief. This was early in August. He was ordered to take the iodide with tonics again. Within two weeks prior to this visit he had again suffered with the pain in the cervical and temporal nerves. His aspect was pale and sallow, and his movements slow and with visible effort. His headache and vertigo had again come on, accompanied with such great weakness that he was then forced to take to his bed. He became very much worse in his head symptoms during a week prior to this time. It would require too much space, and, besides being tedious, so clear an idea is not conveyed by giving the daily details of the case as I can give by reporting the balance of the history in brief. The man complained of soreness over the whole body, and his arms and legs were markedly hyperæsthetic. The eyes were congested, and a strong light was painful in the extreme. The temperature at my first visit was (midday) 102, and during his illness it reached a fraction above 104 at night; the average was 102 in the morning and 104 in the evening. The bowels at first were constipated, and always slow to move. A delirium of great severity, with curious hallucinations, soon came on, preceded by the intense frontal pain. It was continuous as a rule, with at first slight intermissions; at the sixth day it bordered on mania. There was marked rigidity of the muscles of the extremities. Beginning with mild hallucinations it culminated in total loss of intellect. At this time the tongue became quite dry, brown and cracked at the edges. At this, the crisis of the affection, the fæces and urine were passed in bed. The treatment at first was quinine and iodide of potassium, with bromide at night. But in the severe stage chloral was given, and on one or two occasions morphia hypodermically. The

fierce delirium, almost amounting to mania, continued without cessation three and a half days, and was followed by a remission in which for a few hours there was perfect consciousness. Towards evening of the tenth day the delirium again supervened, but was mild in character, and if persistent efforts were made the patient would reply intelligently to questions. The sleep became at this time more natural, with less jactitation and snoring. The iodide had been left off during three days on account of the difficulty of administration, but on the 11th was resumed in doses of 20 grains every four hours, with two grains of quinine. The delirium for the most part ceased on the fourteenth day, and the patient, being then quite rational, complained of frontal headache and dizziness. This condition of the head, attended with great debility, slight hyperpyrexia, continued with slight improvement for twenty-six days, at which time the patient sat up for the first time. He soon went out for a walk, and gradually improved much in health. He continued the iodide of potassium, reaching 40-grain doses four times daily. His head was for a long time light, and he was unable to look at bright objects for any length of time. The headache returned at intervals, but was not severe, and he ceased to be troubled by any hyperæsthetic condition of the skin. This condition had lasted in the arms and legs until full convalescence. There was at no period any evidence of paralysis. After the period of convalescence, the man remained for a long time in an excessively weak condition, both of mind and body, being wholly unable to apply his mind to his duties or to work. He was at intervals troubled with pain in the tibiæ, and occasionally along the course of the descending cervical nerves. When I saw the man last in December, 1873, he was a confirmed invalid, very much emaciated, and troubled with a cough. His mind was then evidently much impaired, his answers were often incoherent, and he complained of want of power of expression. He left for the South, and has not been seen since.

CASE III.—The following case I am enabled to present in full, as Dr. E. Bradley, who treated the patient at one period, has very courteously supplied me with important details. The patient was under my care during the whole period of his

syphilis, except when confined to bed with cerebral inflammation; at this period he was attended by Dr. Bradley.

A. W., aged 18, American, and of frail build, came under my observation in September, 1873, having enjoyed average good health until that time. His family history did not reveal any tendency to rheumatism, gout or phthisis. Since his sixteenth year he had lived a somewhat irregular life and had not taken care of his health, which, though not seriously impaired, still was not in such a state as to withstand the influence of any serious disease. His chancre was of the indurated variety, and was followed by a copious roseola and papular syphilide. Under the influence of mercurial treatment, the manifestations of syphilis disappeared. During the year following he was not troubled with any serious symptom or lesion, and, contrary to my orders, he was very irregular in following treatment. As he was a druggist, he proved to be one of those undecided and erratic patients so frequently observed in persons of that profession, who consulted every physician accessible to him, and was therefore for some periods under different modes of treatment. I am enabled to say, however, as bearing on the ultimate result of his case, that he had not been treated with that thoroughness which is necessary in a disease so grave to one of his age, namely, eighteen years. Though not for long periods under my absolute care, his case was continuously watched by me. During the year following infection, he was not attacked by any serious lesion, and the only visible evidences of syphilis were mucous patches in the mouth and throat; these appeared as late as the twentieth month of syphilis. His appearance indicated that his nutrition was far from perfect, as he was pale and sallow and he complained of fatigue being easily induced. Such, then, was his condition when in July, 1875, he began to give evidence of cerebral trouble. He had then been syphilitic for twenty-two months, and was nearly twenty years of age. In the latter part of June he noticed that he was more than usually weak, and, as he expressed it, the least thing tired him. A headache, principally frontal, then came on gradually, and he complained of being more than usually nervous. At this time he applied to me for treatment, and I ordered for him 20-grain doses of iodide of potas-

sium four times daily, with 5 grains of the citrate of iron and quinine after each meal. I advised attention to health and a trip to the country. At this time I saw him but once. One week after this interview I ascertained that he had not taken his medicine, and that his weakness had become greater, and that so severe was his headache that he could not attend to his duties. His skin was hot and dry, appetite poor, bowels slow, mouth dry. He experienced very often in the day slight dizziness, buzzing in the ears, and much confusion of thought. From this time until August he was under the care of Dr. Bradley. Being unable to leave his room, Dr. B., the attendant of the family was called. Prior to the Doctor's visit a physician sent by a friend had pronounced the case to be one of typhoid fever. From Dr. Bradley's account, I give the following facts: The patient, when first seen, was suffering from severe frontal pain, and was mildly delirious. The temperature is described as much above the ordinary standard, and he presented the various symptoms of the febrile state. He had, during the day, intervals of consciousness, but even then his intellect was rather obtuse. His delirium increased until it reached such a height as almost to be termed mania, but during the whole sickness he was never violent. He was treated by the Doctor for syphilitic meningeal inflammation, by iodide of potassium and quinine principally, while urgent symptoms were met by appropriate remedies. He continued in this state for two weeks: marked delirium with hallucinations, mostly continuous, accelerated pulse and elevation of temperature, being the prominent features of the case. Other minor and secondary symptoms, such as the dry tongue, the slow movements of bowels, a highly-colored urine, in small quantity, were observed. After the tenth day amelioration in the condition of the patient was noted. The delirium ceased, but left the mind in a clouded condition. Thoughts came slowly, and words and actions made slight impressions upon him. He was still very weak, and his headache was replaced by a dull sense of heaviness bordering on pain. In the upright position much dizziness was experienced, and on occasions for a few seconds the sight was blurred by indefinable objects appearing before the eyes. These symptoms gradually grew less pronounced,

and the patient's strength slowly returned. In a month he was sufficiently recovered to walk in the street. About the sixth week after the commencement of his attack, he again came under my immediate observation. I found that his mental faculties had been considerably impaired. Instead of a quick, rapid answer, he hesitated very much over his words, and spoke slowly, with deliberation, showing that he had to make an effort to express himself. In addressing him, he did not seem, on some occasions, at first to comprehend my meaning, and for fully a moment waited until he had collected his thoughts. At other times he made improper replies, or used words wholly inexpressive of what he desired, but he quickly corrected himself, smiling feebly. In fact his whole manner indicated obtuseness of the intellect. His memory was very weak, and in order to impress a fact upon his mind it was necessary to speak with force and precision, and often to repeat. Some of his remarks were simple and puerile, and in marked contrast to his conversation previously, when he spoke with pertinence and animation. The expression of his countenance was much altered, as he presented a slightly silly, grinning look, his features appearing as if on a half smile. The fact of this obtuseness of intellect was forcibly manifested to me on one occasion about this time. He was standing, leaning one elbow on a desk, looking into the street, like one lost in thought, but his eyes seemed vacant, and the muscles of his face had so relaxed as to produce a dropping of the jaw; the whole *ensemble* was that of silliness. On being spoken to he turned and smiled feebly, and to a question as to what had occupied his mind, and what he had seen, he replied he had thought of and had seen nothing. It was evident that he needed iodide of potassium and tonics, and therefore he was ordered to take them. Fortunately for him, he has been more faithful in following treatment, and has experienced benefit. At my last interview with him, within the past few days, I found him in a very hopeful condition. His mind is much clearer, he has not as much confusion of thought, his memory is better, and his facial expression is more natural and vivacious. Indeed, a most marked contrast exists between his appearance and condition of to-day and that of the early part

of July. He has headache now only when fatigued or excited; he sleeps well at night, and feels natural during the day.

There are certain interesting and important questions suggested by the group of cerebral symptoms presented by these cases: First, what is the morbid condition or lesion which causes them? Second, is that lesion primarily or remotely caused by syphilis? Thirdly, may we assume that these symptoms are typical of or the expression of a definite condition or affection liable to be met with in the course of syphilis? In order to answer the last question, it is necessary to study the symptoms of each case comparatively, and in the light of our present knowledge of syphilis. Let us first inquire into the condition of the patients. The first was a young man 24 years old, of irregular habits, whose constitution was much weakened by syphilis. He did not follow treatment thoroughly, and although he did not otherwise suffer from severe syphilitic manifestations, in the eighth month of the disease cerebral symptoms appeared. The second was a man 32 years old, of consumptive tendency and of frail build, who was therefore an unfavorable subject for syphilis. In him, in spite of careful treatment, the disease ran a rapid course. Cerebral symptoms were manifest in its fourth month, and though for a time ameliorated, they led to permanent impairment of the intellect. The third case was also that of a young man, a minor aged 18. Before the maturity of his constitution, which was naturally weak, he had induced a condition of ill health and general debility by bad or irregular habits. In this weakened condition he contracted syphilis, and although in him only slight visible manifestations were present, in the twenty-second month of his disease evidences of cerebral disturbance were observed. To sum up then, in three syphilitic men, in whom a marked impairment of bodily nutrition was present, who had been respectively infected eight, four and twenty-two months, a similar cerebral affection was developed. In none of them were there evidences of tertiary syphilis, and from the fact of the absence of late lesions, and considering the time of invasion of the brain troubles, we are warranted in looking upon them as appearing in the secondary period. I will not here discuss further the reasons why I assume their development

in the secondary stage, other than to say that as they are, in all probability, of an hyperæmic nature, they are therefore to be looked for in that stage of syphilis—namely, the secondary—in which local hyperæmias or congestions are more common than in the tertiary period, of which new formations are generally the lesion. In all of these cases unmistakable secondary manifestations of hyperæmic nature had been observed a short time before the evolution of the symptoms under consideration. Viewed, then, in detail, by themselves, and studied in contrast with cerebral symptoms of other affections, those of these cases are explained most satisfactorily as being due to congestion of the cerebral meninges, more particularly of the anterior basal portions. The very frequent occurrence, as found at the autopsy, of thickening of the meninges of the base of the brain, caused by syphilis, shows that in that disease there is a greater tendency to the invasion of those parts than others. It may have been thus limited in these cases, as there is nothing in the symptoms inconsistent with that view. Grouped as a whole, and studied as to their evolution and course, they are, without doubt, indicative of subacute meningitis. As this condition has been so well recognized and described, and as there are so many facts to prove the existence of the meningeal hyperæmia, it is unnecessary for me to study, step by step, each symptom, and to trace it to its origin. Such being essentially the lesion, what is its cause? Inquiries in each case convinced me that no visceral lesion existed, and that the patients had never had any such symptoms before. There was no history of malarial complication, and, examined in every aspect, the only cause of the affection which I could find was syphilis. The suspicion that it was the origin of the symptoms is based on other good reasons besides that of diagnosis by exclusion. Being a hyperæmia, it is fully in accord with known facts and precedents to assume that it was caused by syphilis, since in the secondary stage local congestions of skin, mucous membranes, fibrous tissues, etc., are so common. Then again, a convincing analogical fact comes to our aid, namely, that in certain cases of paralysis of various nerves, we find very frequently superadded the same symptoms which were observed here. Further than

this, the general aspect of the cases in their evolution and decline, as influenced by treatment, points more strongly to syphilis than any other disease. Lastly, post-mortem investigation has shown evidences of hyperæmia of the cerebral meninges undoubtedly due to syphilis. A question of some importance arises, namely: Had the general bad condition of health of these men any influence in the production of the brain affection, or in tending to induce syphilitic manifestations in the meninges? This question is one of much import, and cannot be fully answered by deductions from so small a number of cases. We know that general debility tends to produce and aggravate morbid processes, but in the present instance it is impossible to determine its exact bearing. It is, however, a clinical fact of some importance, and I thus particularly call attention to it, that there was superadded to the syphilitic diathesis a lowered condition of the economy in these cases. Perhaps in future, when we have a greater number of reported cases, we can form more precise ætiological deductions, but with the small number now at our command, we can only form approximative ideas. One point, however, is suggested by the first and third cases which I deem of the utmost importance, and that is, that the patients did not submit to proper treatment, and take that care of their health which, they being syphilitic, was necessary for them to do. I think that, in general, a carefully-followed treatment and preservation of the normal standard of the health will give an immunity to grave syphilitic manifestations, and in most cases effect a cure. The insufficiency of treatment may, therefore, have had much influence in these cases.

Thus far in our inquiry we have found that the lesion is an hyperæmia of the cerebral meninges of subacute form, and that syphilis is the cause. We have good reason for considering that the group of symptoms presented by the cases constitute, if taken as a whole, in their evolution, course and decline, a very definite and recognizable affection. As I said in my introductory remarks, the subacute meningitis of syphilis has long been recognized pathologically, but, strange to say, its clinical features have not been studied with a view of elaborating a didactic description. I am only able, with the cases at

my command, to give a general outline of the condition, as there are many features which require future amplification. Thus, the relative frequency of occurrence of cerebral symptoms, their intensity and variations of feature can only be judged of in a general way. So, also, we can only speak approximatively of the condition of the pulse and temperature. I have no doubt but that the experience and observation of the members of this society can add much to our knowledge of the subject. The course of the disease will be found to be usually as follows: In the secondary period of syphilis, perhaps in a subject in whom the disease has induced great impairment of health, a sensation of great weakness is experienced, and at the same time, or perhaps shortly after, a dull, continuous frontal headache is complained of. Very soon vertigo accompanies the headache, which may or may not be worse at night, and the two sensations may assume severe forms. Restlessness at night and insomnia are combined with nervousness of varying degrees. The patient complains of confusion of thought, and there may be also a noticeable impairment of the memory. It may happen that the only prodromal symptoms are the weakness and headache, or again, the symptoms above spoken of may be intensified and associated with such others as mild photophobia, painful impressions from loud noises, with delirium at night. These symptoms continue for a period, which may last from two weeks to two months. Then we notice that grave disturbances have occurred. The temperature rises to about 100° , with slight night and morning variations, the pulse-beats are increased to the neighborhood of 100 and above that, and there are all the usual concomitants of the febrile state. Cerebral symptoms soon become intensified. The headache rapidly passes into delirium, which may be continuous in character, or again, it may cease, and periods of nearly perfect consciousness may be observed. This delirium may be mild in form, or again, it may merge into a moderate, even severe mania. In these attacks the patient may pass some days simply affected with his frontal headache and general adynamic symptoms, or he may for a like period be delirious, and oblivious to everything taking place around him. It must be expected that the cerebral symptoms will vary within great

limits. Usually the abdominal symptoms of typhoid will be absent, and this feature is an interesting one in diagnosis. Though my cases do not exemplify the fact, paralyses of the most varied kind may take place during the period of cerebral irritation, and I am warranted, by the observation of a case of which I have lost my notes, in saying that in the progress of this syphilitic meningeal inflammation epileptic convulsions may occur. In this case the spasms were both mild and severe in character. I am disposed to account for the occurrence of paralysis during the course of syphilitic meningitis by the extension of the hyperæmia to the points of origin of the various nerves. These, then, are the symptoms referable to the nervous system. As convalescence occurs they become gradually less marked, the delirium passes into headache, this into lightness or a sense of weakness, until the normal state is reached. Two of my cases show that perfect cure may result, while the third proves that the symptoms indicative of cerebral softening may show themselves later on. But there are interesting points to be observed after the cessation of the hyperæmia. During its existence, and perhaps prior to it, we find alteration of the temperament of the patient. There may be marked melancholy, or transitions of feeling from sad to excessively gay. Such patients may, in the prodromal stages, be mentally weak and impressive in an inordinate manner to laughter or sorrow. Their special senses may be in the beginning rendered more acute, and perhaps might be, as a result, permanently disorganized in a greater or less degree. Time does not permit me to consider the diagnostic points of this affection, but I think that such, to the educated physician, are unnecessary, as, if this condition is once understood, it presents such strikingly peculiar features as will lead to its prompt recognition. The prognosis of the affection may be said to be good, if early recognized and properly treated, and upon this simple fact really depends the result; for I am convinced that if the hyperæmia is left uninfluenced by specific medication, grave structural changes will be induced, which will lead to disorganization of the brain. I think I need not say more than quote the second case as an instance in which the symptoms were menacing from the commencement, and call attention to the

first and third as showing that they are amenable to treatment. In instances like my second patient, grave suspicions as to the result will be entertained during the progress of the disease, as treatment had very little effect on it. In such a case, where every possible intelligent effort is made to cure the syphilis, the supervention of cerebral symptoms is certainly the gravest indication possible. The condition of the brain following this temporary affection and during its course, as shown by the facial expression of the patient, has been well described as that of hebetude, in which an expression of greater or less dullness of the intellect is found. The duration of this affection varies very much and cannot be positively stated. In favorable cases it may run its course within two months, or it may occupy a longer period, or again, owing to the structural changes induced, become chronic, being then accompanied with complications of varying character. These circumstances and considerations warrant us, then, in describing as a morbid entity, subacute syphilitic meningitis.

The occurrence of mydriasis in one of the cases is interesting as being the only co-existing symptom of paralysis, and that of temporary duration. The hyperæsthesia observed in another case is also interesting as a symptom occurring in both superficial and deep brain disease. In contrast with this condition, I will call the attention of the society to an interesting group of nervous symptoms which were observed in the case of a syphilitic woman whose history I published some years ago in full; but which I now present in an abbreviated form. The symptoms were mild and ephemeral in character, and were due to disturbances of the intellect and of the special senses, caused undoubtedly by syphilis. The present case I think may be taken as a good example of the mildest form of nervous affection caused by syphilis. In it the symptoms are more numerous and clearly marked than in many others which I have seen, but in other cases I have observed nervous phenomena of the same nature, chiefly in women, and but rarely in men. Fournier, in his recent admirable work on syphilis as observed in women, describes very graphically numerous nervous phenomena presented by syphilitics, which I am convinced belong to the same class as those of the following case.

C. M., aged 22, married, a well-built woman, became syphilitic in March, 1870, and was treated by me for primary and secondary lesions. The disease assumed a quite active form, and showed itself by roseola, papular rashes, pains and iritis. One year after contagion she suffered from a continuous dull supra-orbital pain. Soon a dizziness was experienced, which at first came on at intervals, and afterward became quite permanent. In walking her steps were unsteady, and on occasions a sensation as if she would inevitably fall backwards was felt, but controlled always by a forced mental effort. At this time, being absent from New York, she was, as I have since learned, treated for hysteria. On coming to the city, she came again under my care, and I found the following condition: She was emaciated, and instead of being cheerful she was sad and despondent. Her appetite was poor but not capricious; the bowels moved regularly, and urine was normal in quantity and as to constituents, and her menses were regular. Her pulse was 60 and small, and the temperature normal. It was noticed that she was more irascible than usual, and after such spells, which were of frequent occurrence, she often wept copiously. After this she would remain for hours in a condition of abstraction, not appearing sensible or cognizant of things passing around her. She would go away from the table when eating, imagining that she was not good enough to be in company with others. At other times she would become very suspicious, and would imagine that her friends were conspiring against her, or that they were laughing at her and making sport of her. Under this impression, she would become very nervous, and would shrink away and cry, and would perhaps sit hours without moving; and if any one came near her she would, as it were, awaken from her lethargy greatly frightened, and be much agitated. These objective phenomena were described to me by her aunt, and some of them I had the opportunity of observing myself. When I spoke to her, she recognized me very readily and was pleased to see me, and she said she felt grateful for my past services. I asked her if she felt in this strange manner continuously, and she replied that there were intervals in which she was comparatively free from them, and that she tried very much to resist them. She said she felt

quite weak, that her memory was very poor in comparison to what it had been, and that in reading a book or paper she very often forgot when she got through what she had read. This fact was very apparent, for she was fond of reading the sensational serials in the weekly papers, but her memory was so much impaired that she could not keep the thread of the narrative. She complained of weakness and dimness of vision, and she frequently saw *muscæ volitantes* before her eyes. She said, also, that her sleep was very much disturbed, and she frequently awoke greatly alarmed. Upon walking a sensation of ataxia was noticed, and she said she felt uncertain as to where she was placing her feet. At this time she had nocturnal rheumatoid pains along the tibiæ, and also in the larger joints. She complained of certain peculiar analgesic symptoms, as a sensation of numbness in the outer aspect of the arm and the back of the hand. I examined her very carefully in reference to this condition, and found that it was not very well marked, and that though she did not feel pain from slight pinching or pricking of the backs of her hands, if these procedures were actively tried she flinched from them. I would also add that, according to the statement of her relatives, she had never shown any hysterical tendency, nor had she suffered from fever and ague. I placed her upon a combination of the iodide of potassium with the bichloride of mercury, and in two months her nervous symptoms were cured and her health was improved.

Thus we find that the disturbances were those of intellectuation, of general and special sense, and of the power of co-ordination. The troubles of intellectuation consisted in an alteration of the disposition of the patient — she becoming melancholy, morose, suspicious and irascible — in the impairment of her memory, and in the vertigo. The disturbances of general sensation were well shown by the analgesia, and by the supra-orbital pain, and those of the special sense in the weakness of vision. The impairment of the power of co-ordination was of a mild character, but still quite well marked. Not only did these symptoms wholly vanish under the treatment, but the general nutrition of the patient was much improved, and she has remained well up to the present time. It is interesting to note

the evolution of these symptoms within a year after contagion in a patient upon whom the disease did not manifest itself by gummy new formations.

Whether this group of nervous phenomena was the result of a mal-nutrition of the brain tissue, owing to the syphilitic state of the blood, or whether they were due to a low grade of meningeal hyperemia, I am unable to say. The fact that in syphilitic persons—in women, particularly,—such symptoms are frequently observed, as shown by Fournier and others, and by other similar cases which I have seen, is corroborative of the view that they were caused by that disease, and then when the course of the case is fully considered, I think that all doubt is removed. Tonics and nervines failed wholly to control the symptoms which rapidly disappeared under a syphilitic treatment. I am aware that too often treatment is made the touchstone of a diagnosis of syphilis, but in the present case all circumstances, as well as that, tend to point to that disease as the cause. I was careful to do without all tonics until I had tested the effect of the mercury and iodide of potassium. As this paper is simply a personal contribution, I do not amplify it with cases and observations of others, as such a course would lead me into a greater length and to a different purpose than is my object. I would suggest that the last case should be read in connection with the observations of Fournier.

The next case to which I shall call the attention of the society is one of the most remarkable in literature, by reason of its peculiar course, and of the rapid supervention of nervous symptoms, hemiplegia occurring at the fifth month of syphilitic contagion, and death ensuing within thirteen months. As the case was observed by me for a long period, I am enabled to give its principal features.

T. O. N., aged 26, Irish, a coachman, patient of New York Dispensary, had a hard chancre in September, 1870, followed in one month by a general, small pustular syphilide. He was placed upon appropriate treatment, and more than ordinary care was taken in this as well as in the matters of diet and hygiene, owing to the facts, first, that he was a man of frail build and light complexion; second, that his family history showed the existence of tubercular disease in several of its

members on both sides. Though a Dispensary patient, he lacked nothing as to diet and care. In November iritis of both eyes came on—first in the right, and in three weeks in the left. These were treated locally in addition to a tonic and mercurial treatment, yet no improvement was observed. At this time great weakness was felt, which was much aggravated by continuous insomnia. Soon nervous phenomena, such as severe vertigo, and trembling at slight cause, were experienced, and a constant frontal headache was also complained of. In the month of December, the vertigo was so severe that in coming from the light of the street into a slightly darkened room, he fell down. These symptoms continued, with slight remissions and exacerbations, until February, 1871, when, owing to domestic difficulties, he was compelled to enter the Strangers' Hospital, where he was jointly under the care of Dr. Otis and myself. His pulse during the period of my treatment, from November to February, had been small and frequent—about 88 and above—and his temperature, which was taken either by me or by an assistant daily, and for a period of a month twice daily, ranged between 100° and 102° . At the date of the invasion of the second eye, it reached $103\frac{1}{2}^{\circ}$. In spite of very careful and active treatment, general and local, synechia of each eye had formed. In order to spare the stomach, I used mercury subcutaneously, which method worked well in this case. On the fifth morning after admission into the hospital, having on the day previous suffered much from headache and vertigo, he awoke partially paralyzed on the left side, and by night he was unable to move his arm and leg, but he had no facial affection. He was ordered to take large doses of iodide of potassium with tonics and nutritious food. For a few days after the attack of paralysis, his headache and dizziness were improved, but on the tenth day the first symptom became very severe and constant. At this time slight motion was noticed in the affected limbs, sensation never having been impaired, and although one eye remained in an inflamed state, the other was much improved. During the next three weeks the condition of the patient was variable; some days the headache was very severe; then it would partially cease. The eyes then became worse, until both were as bad as at any time.

This was in spite of large doses of the iodide, mercurial inunctions carefully administered, and the most appropriate diet which could be given. Towards the middle of March the patient's state was not encouraging; the headache was severe, insomnia was persistent, attended with mild delirium. The appetite was very poor, and the bowels slow, but still improvement was noticed in the motion of the affected limbs. On the 21st of March he complained of weakness in the right arm and leg, and on awakening the next morning, he found that they were paralyzed as to motion. He was then wholly paralyzed on one side and partially so on the left. The second paralysis supervened five weeks after the first. Articulation was now difficult, and there was evident confusion of thought. The condition known as hebetude was well marked, as the patient assumed continually a stupid expression, and at very slight cause laughed immoderately, and being unable to control himself, would then burst into tears. At night there was insomnia and delirium, and during the day headache and marked evidence of weakened intellect, with extreme bodily prostration. During this time the patient became much emaciated. From this state he rallied, and for a short time his intellect was clear and his nervous symptoms were less severe. The flexors of the left hand had become contracted, and the movements of the limbs of this side were much impaired. The paralysis of the right side grew gradually less, and after having lasted three weeks, was scarcely perceptible. On the 22d of May his original paralysis of the left side recurred, after having nearly ceased. On this occasion the loss of motion was greater in the arm than in the leg. It was then observed that there was slight anæsthesia of the leg. The iodide of potassium was continued in large doses with occasional inunctions of mercurial ointment. During the latter part of this month great improvement was noted, but it was only temporary, as an intense pain was soon felt in the left temple, and buzzing noises were heard in the ear of that side. In the early part of June the patient was sufficiently improved to be able to walk with the aid of crutches, and did not suffer very much with cephalalgia; but this favorable state only lasted about ten days, when all the symptoms grew worse. The headache

became more intense, and the paralysis of the arm recurred, but there was limited motion in the leg. The state of the intellect became much worse, and marked symptoms of dementia were observed. On the 20th of June the patient lost control over his bladder, and for three days it was necessary to draw the urine with a catheter; at that time he regained control over that viscus. During the periods when the patient suffered from headache, insomnia and delirium, his symptoms were met with chloral, bromide of potassium, and by morphine subcutaneously, as occasion required. The paralysis of the right side, which supervened five weeks after that of the left side, did not relapse again after its first cessation, except in a condition of temporary weakness; but on the left side, in which paralysis originally began, it recurred in varying degrees of severity several times, and finally left the two members in a state of impaired motion, with slight contraction of the flexors of the arms. It would be tedious to give all the details of the case until the departure of the patient from the hospital. The nervous symptoms were upon one day worse, and upon another better, still the general tendency was bad. The intellect of the man was much weakened, though at his departure, he was only slightly palsied, and did not suffer from headache. During this whole time his iritis relapsed very often. I have since learned that the dementia became more marked and that the man died in October, 1871, the cause of his death being stated to be softening of the brain.

The interesting features of this case are strikingly obvious. The cerebral trouble manifested itself first by headache and delirium, with other minor accessory symptoms; then hemiplegia, which became bilateral, supervened, and later on, its origin being synchronous, derangement of the intellect in the form of dementia was observed, which ended in death within a short time. As an instance of the very early occurrence of hemiplegia it is very interesting, and the fact that that condition was double is strikingly characteristic of the paralyses of syphilitic origin. As to the lesion in this case, I think that there can be no doubt but that it was an inflammation and infiltration of the vessels which, originally beginning in the inner coats, being then an endo-arteritis, gradually involved

the other coats of these canals. The symptoms are fully explained by this hypothesis. In this connection it is well to call attention to a recent able work by Heubner (*Die Leutische Erkrankung der Hirnarterien*), in which a very clear account is given of the clinical history and pathology of syphilitic lesions of the vessels of the brain. A study of this work will materially assist the observer in the correct understanding of the symptoms of syphilitic cerebral disease, which might otherwise appear obscure.

125 EAST TWELFTH ST., November, 1875.

